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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/718,101

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Jack Y. Peng

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EXAMINER

SMITH, NICHOLAS A

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

11/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/718,101

Applicant(s)

PENG ET AL.

Examiner

Nicholas A. Smith

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6 August 2007 has been entered.

Status of Claims

2. Claims 1-3 and 5-22 remain for examination. Claim 4 has been cancelled.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4-5, 7-15 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nayar (US Patent 4,126,451).

5. In regards to claim(s) 1, Nayar discloses a method of producing a framed-metal-matrix-composite-sheet from a powder mixture (abstract), comprising: producing said powder mixture by mixing a matrix metal powder and at least one claimed reinforcement material (col. 3, line 49 to col. 4, line 5; Example 5, col. 12, lines 3-10); loading said powder mixture into a metal frame to form a framed mixture, further comprising

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compacting said framed mixture to form a framed compact having the claimed theoretical density (col. 2, lines 37-43; col. 2, lines 48-50); consolidating said framed compact to form a framed-billet that is in the claimed theoretical density (col. 2, line 59 to col. 3, line 15; col. 3, lines 36-44), wherein said consolidation further comprises degassing of said framed compact to form a degassed-framed-compact (col. 2, lines 57-59); and rolling said framed-billet to said framed-metal-matrix-composite-sheet to form a plate/sheet without edge cracks (col. 4, lines 48-63).

6. However, Nayar does not explicitly disclose framed-metal-matrix-composite-plate/sheet is comprised of thin skins of said frame metal, as compared with the metal-matrix-composite as a core of said plate/sheet. Nayar discloses in Figure 2 and Table II (T_p vs. T_m ; wherein T_p is $(T_d - T_m)/2$) wherein the dimensions of the punch plates (after rolling, T_p) are thicker or the same value as the pressed, inner powder later (T_m after rolling).

7. It would have been obvious to one of ordinary skill in the art to modify the dimensions of the punch plates to be thin in comparison to the pressed metal powder layer because it has been held that where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. See MPEP 2144.05 IV.

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8. In regards to claim(s) 2, 5 and 7-12, Nayar discloses the claimed matrix metal powder materials and reinforcement materials as well as the metal frame limitations (col. 2, lines 28-62; col. 11, line 53 to col. 12, line 32).

9. In regards to claim(s) 13-15, Nayar discloses the steps as stated above in paragraph 6. Furthermore, Nayar discloses heating in a controlled environment at the claimed degassing temperature for the claimed degassing time period (col. 6, lines 25-58). Furthermore, Nayar discloses the claimed gas (or lack thereof) environments (col. 6, lines 25-58).

10. In regards to claim(s) 17-18, Nayar discloses a consolidation temperature that meets the claimed limitation (col. 2, lines 59-62; col. 7, lines 15-24; Table II).

11. In regards to claim(s) 19, Nayar discloses the claimed steps as stated above in paragraphs 5, 7 and 8. Furthermore, Nayar discloses consolidating as sintering (col. 4, lines 6-30; col. 11, line 53 to col. 12, line 32; Table II).

12. However, Nayar does not specifically disclose a pressing (compacting) at room temperature to form a framed compact to the claimed density.

13. Nayar teaches that compaction to high densities can be achieved by applying higher pressure (col. 6, lines 6-7). It would have been obvious to one of ordinary skill in the art to modify Nayar's method with Nayar's step of applying appropriate pressure to achieve the proper density (and thus meeting the claimed density) because Nayar teaches density after compaction is a result-effective variable dependent on the applied pressure (Nayar, col. 6, lines 6-7).

14. In regards to claim(s) 20-21, see reasons stated above in paragraph 7.

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15. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nayar (US Patent 4,126,451) as stated above in paragraphs 5-6, and as evidenced by Lowrance, II et al. (US Patent 5,382,405).

16. Nayar discloses a mesh size (col. 12, lines 3-10), but does not specifically disclose the particle size with that mesh. Lowrance, II et al. evidences such a mesh size meets the claimed limitation (Lowrance, II et al., col. 20, line 7-39).

17. Claims 16 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nayar in view of JP 61194101 A (JP'101).

18. Nayar does not specifically disclose a controlling environment for degassing using air.

19. JP'101 discloses degassing metal powder in air (abstract). It would have been obvious to one of ordinary skill in the art modify Nayar's method with JP'101's degassing controlled environment because JP'101 teaches such degassing using air is conventionally used to produce a billet (JP'101, abstract).

Response to Arguments

20. Applicant's arguments filed 6 August 2007 have been fully considered but they are not persuasive. In regards to Applicant's argument that Nayar does not explicitly disclose the claimed reinforcement material, please see paragraph 5 above, and more specifically, Example 5 in Nayar. In regards to Applicant's argument that Nayar does not explicitly disclose the claimed thin skins of a framed-metal-matrix-composite-plate/sheet, please see reasons stated above in paragraphs 6-7.

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on (571)-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NAS

Susy Tsang-Foster
Supervisory Patent Examiner